
M E M O R A N D U M

DATE: 7/07/99
TO: Each Board Member
FROM: Annette Prendergast
RE: Application for an Integrated Pollution Control licence from
 Mr. Antone Kiernan, Turin, Mountnugent, County Cavan
 Reg No. 382

Application Details	
Class of activity:	6.2; The rearing of pigs in installations, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents; 1 pig = 1 unit 1 sow = 10 units.
Location of Activity	Carrowcushcly Pig Unit, Carrowcushcly, Ballymote, County Sligo.
Licence application and EIS received:	03/02/98
Notice under article 14 issued:	26/03/98
Notices under article 11(2)(b)(ii) issued:	26/03/98, 02/06/98
Information under article 11(2)(b)(ii) received:	17/04/98, 24/06/98, 09/04/99
Article 10 compliance:	09/04/99
Notice under article 17 issued:	04/05/99
Information received:	15/06/99
Submissions received:	3
Site Visits:	26/05/98, 17/05/99

Profile:

The Carrowcushcly Pig Unit is an existing 450 Integrated Sow Unit which received planning permission in April 1998 to expand to a 600 integrated sow unit. The applicant wished to carry out alterations to the Pig Unit in order to improve the quality of existing animal accommodation and increase capacity to 600 sows. The proposal will result in increased slurry storage capacity together with modern slurry management. All clean water will be directed to clean water drains. Pigs will be housed in slatted rather than bedded-based housing. The unit currently employs 4 full time employees including a site manager. The unit is situated on approximately 10 acres, 4km N/NW of Ballymote. The main inputs are fuel, feedstuffs, medicines, detergents and water and the main output is animal carcass and slurry.

Waste:

According to the applicant, the operation of the pig unit will result in the production of 10,001.42 m³ of slurry (including 909.22 m³ of wash water) annually. Total annual straw for disposal from the gilt house is 9.1 tonnes. Liquid waste from the gilt house is included in the total slurry figure. There is sufficient slurry storage for 41 weeks slurry. Slurry is stored underneath houses, in slurry tanks and in the slurry transfer channel. The company is required to monitor slurry levels in these tanks on a weekly basis. (see condition 5.5.1 of the PD). The company is required to fit high liquid level alarms on all pump sumps within six months of the date of grant of licence. The slurry spreading contractor has a 1000 gallon and 1200 gallon tanker both fitted with low trajectory splash plates and the sow unit has a 750 gallon tanker fitted with a low trajectory splash plate for land spreading. Slurry spreading is either undertaken by the slurry spreading contractor or individual farmers.

The annual quantity of P in slurry produced in the unit is estimated as 13,200 kg of P based on each sow and her progeny (to finisher weights) producing 22 kg P per annum. The applicant submitted a Nutrient Management Plan (NMP) using Teagasc 1994 recommendations. The spreadlands have the capacity to assimilate approximately 41,000 kg of P per annum on the basis of this NMP. Using Teagasc 1997 Guidelines the spreadlands have the capacity to assimilate 24,000 kg of P per annum. Land use is mainly grazing and silage with a minor amount of hay. A total of 1147.55 hectares are available for the spreading of pig slurry. The spreadlands are all located within a 9Km radius of the piggery in an area of predominantly drumlin topography. According to the publication, Soil Associations of Ireland and Their Land Use Potential, soils in the spreadlands are mainly Grey Brown Podzolics with some Gleys and Basin Peat soils. Seven test pits were excavated on the spreadlands and five soil groups were encountered namely, Grey Brown Podzolics, Brown Earths, Humic Podzolics (reclaimed) Gleys and peats (cutover and reclaimed). Poorly drained land on a peat or gley soil was not included as a suitable landspreading area, as detailed in the application.

Condition 5 of the PD contains conditions relating to waste management. Schedule 3 (v) lists buffer zones for landspreading and Schedule 3 (vi) contains a code of practice for landspreading.

Animal carcasses and tissue are stored temporarily on site in sealed skips. Skips are removed on a weekly basis by a waste contractor and delivered to Monery Agri-Products, Crossdoney, Cavan. There is scope to construct a lined burial pit in the western half of the site in the event of a Class A outbreak. Domestic sewage at the site is currently discharged to a septic tank on site. Used and out of date veterinary products and containers are returned to suppliers.

Proposed Natural Heritage Areas/ Areas of Scientific and amenity value

The Sligo County Development Plan lists Collooney Forest and Templehouse Lake as items of scientific and amenity value. Collooney forest is located to the north of the proposed block of spreadlands and there are no spreadlands adjoining Templehouse Lough. The Owenmore flows through Templehouse Lough and spreadland 54 adjoins the Owenmore upstream of Templehouse Lough. The proposed natural heritage areas in the vicinity of the spreadlands are Knockmullin fen, Templehouse and Cloonacleigha Loughs (site 000636), the Unshin river, Quarryfield West Turlough, Turloughmore and Fin and Rinskeen Loughs. Site 000636 is a 406 ha site comprising 3 Loughs, Templehouse Lough, Cloonacleigha Lough and Killawee Lough. A site synopsis from the National Parks and Wildlife Service lists water pollution from run-off from surrounding agricultural lands as one of the potential threats to the survival of the areas flora and fauna. Land sector 29e borders Cloonacleigha Lough and this has been removed as a spreadland in the PD. Land sector 45 borders a feeder stream into Cloonacleigha Lough and buffer zones have been included around the feeder streams. A tributary of the Unshin river adjoins spreadland no. 7. Spreadlands 2,10b,14,22 and 23 are located in the vicinity of Knockmullin Fen. The National Parks and Wildlife confirmed in a fax dated 22/08/97 (included with the application) that none of the lands listed above are located within Knockmullin Fen. Quarryfield West Turlough, Turloughmore, and Fin and Rinskeen Loughs are all located at 1Km or greater distance from the spreadlands. Any archaeological item or feature encountered during the field assessment of the spreadlands was marked for exclusion as a landspreading area, by the applicant. A 10

meter buffer zone has been included in the PD for archaeological features. Buffer zones for water courses have been included in the PD.

Air:

There are two aspects to the development relating to air quality - on-site issues and off-site landspreading.

There are three houses located within 50 meters of the sow unit and one house at approximately 400 meters. Within the 50 meters, one of the properties is the managers dwelling and the inhabitant of the second house works on the unit. The third house was derelict until recently when it was taken over by the Local Authority and is now being rented out. The employee of the pig unit has signed a letter (included with the application) stating that he has no objection to the operation of the pig unit. All four houses have been included as an odour sensitive locations in the PD. No complaints have been received in relation to odour from this facility. Odours from the installation will be minimised by storing dead pigs in sealed skips, maintaining adequate ventilation in pig houses to prevent build up of odorous gases, and avoiding slurry agitation during the evenings or at weekends.

The applicant proposes to use a low trajectory splash plate system for slurry application.

Water:

The Carrowcushcly site and the existing and proposed spreadlands are all located within Hydrometric Area 35: Sligo Bay and Drowes. The drainage is generally in a north to north-easterly direction with the Owenmore River draining the spreadlands to the west of Ballymote from the South of Rathmullen to Collooney. The tributaries of this river include the Clonnen river, Bunnanaddan stream, Ballymote stream, Killoran Lough stream, and the Owenbeg river. The Unsin river drains the spreadlands to the east of Ballymote. The Owenmore and the Unsin both have their confluence at Collooney where they become the Ballysadare river which flows into the sea at Ballysadare bay. Within the spreadlands there are a number of lakes, the largest being Templehouse Lough and Cloonacleigha Lough. Other lakes include Toberscanavan Loughs, Lough Corran, Boathole Lough, Bellanascarrow Lough, Ardrea Lough and Killawee Lough.

Biological Quality Ratings for water bodies in the vicinity of the Spreadlands

	1990	1994	1997
Ballymote Stream (0040)	2-3	4	3-4
Ballymote Stream (0100)	3	4	4
Clooneen (0500)	4	4	4
Clooneen (0600)	5	3	4
Owenmore (Sligo) (250)	3-4	4	3-4
Owenmore (Sligo) (300)	4	-	-
Owenmore (Sligo) (400)	4-5	4-5	4
Owenmore (Sligo) (500)	4	4	4
Owenmore (Sligo) (600)	3-4	-	-
Owenmore (Sligo) (610)	-	4-5	4
Owenmore (Sligo) (700)	5	-	-
Owenmore (Sligo) (800)	-	-	-
Unshin (500)	4-5	4-5	4-5
Unshin (600)	4	4	4-5

Results of Chemical Analysis 1995-1997.

River	1994-1997	Tot. NH ₃ mgN/l	PO ₄ mg/l	Oxidised Nitrogen mg/lN
	BOD mg O ₂ /l			

Ballymote Stream (0050)	1.3	0.024	0.014	0.74
Ballymote Stream (0100)	1.4	0.026	0.02	0.75
Owenmore (Sligo) (300)	2.2	0.067	0.038	0.69
Owenmore (Sligo) (400)	1.9	0.062	0.043	0.67
Owenmore (Sligo) (500)	1.6	0.052	0.031	0.71
Owenmore (Sligo) (600)	1.8	0.044	0.03	0.67
Owenmore (Sligo) (700)	1.4	0.026	0.029	0.56
Owenmore (Sligo) (800)	1.5	0.03	0.026	0.6
Unshin (500)	1.5	0.021	0.015	0.53
Unshin (600)	1.3	0.018	0.018	0.56

Comparing biological river quality data from Ireland-River Quality surveys for 1987-1990, 1991-1994 and 1995-1997 in the vicinity of the spreadlands the following trends are evident. For the Owenmore sites in the vicinity of the spreadlands one out of four sites has gone from unpolluted to slightly polluted from the 91-94 period to the 95-97 period, in the 1990 period this site was slightly polluted. The moderately polluted site on the Cloneen river has gone to unpolluted status. All other sites on this river are still unpolluted. One out of two sites on the Ballymote stream have gone from unpolluted to slight, however both sites were moderately polluted in 1990. The Unshin and the Owenbeg rivers have remained the same with all sites still unpolluted. In relation to the median chemical data for the 1995-1997 period the molybdate-reactive phosphate (MRP) median concentration exceeded the threshold of 30 µg P/l for four sites on the Owenmore river. The Phosphorus regulations have set a threshold for satisfactory conditions in terms of MRP 30 µg P/l, since this equates with the Q 4 rating (border category between satisfactory and unsatisfactory).

Water quality data for the lakes in the spreadland areas is not readily available. Sampling data for Templehouse Lake is available for 1973/1974, in a publication entitled: 'Preliminary Survey of Irish Lakes' P.J. Flanagan and P.F. Toner, May, 1975. Templehouse Lake is located on the Owenmore. The sample site downstream of the Owenmore is classified as unpolluted in the 95-97 survey. The applicant states in additional information submitted with the application that from discussions with Sligo County Council there are no water bodies used for public water supply in the spreadlands except Bellanascarrow Lough situated east of Ballymote. This lake is used as the water supply for Ballymote. The lake is sampled four times a year by the EPA and results for the last two years are within A 1 surface water quality for all parameters analysed except colour and manganese which are within A 2 maximum admissible concentrations. Farm no 19 is located beside the Lough. As a precautionary measure a 300 meter buffer zone is proposed where no spreading is allowed, a 100 meter buffer zone is proposed for the feeder stream which flows along the northern boundary of the farm. This has been specifically included in Schedule 3(v) buffer zones for landspreading, of the PD.

Aquifer category:

A report on groundwater vulnerability was submitted with additional information on the application. The spreadlands of which the majority are currently utilised are located in County Sligo, extending from Collooney in the North to Bunnanaddan in the South and West from the town of Achonry to the townland of Roscib in the east. The spreadlands are located at elevations of between 50 m O.D and 130 m O.D and are within the Ballysadare River catchment.

A copy of a GSI map showing aquifer classification for the spreadland area, shows that the majority of the spreadlands are located within a regionally important karst aquifer and the rest of the spreadlands are located within a poor aquifer. There are no sand and gravel aquifers located within the spreadlands. Although some groundwater abstraction schemes exist, the majority of towns and villages rely on mains water. The dept of overburden within the spreadlands was assessed using 39 reference points. However guidance in the Groundwater Protection Schemes suggest one reference point per hectare for extremely vulnerable areas and one reference point every five hectares for other areas. Its estimated that approximately 480 hectares are required for landspreading which means that a minimum of 95 reference points are required to assess vulnerability.

In the study submitted farm 49 and 55 located in the regionally important aquifer did not have 2m soil cover and these lands have been excluded in the PD. Additional information submitted by the applicant, proposed that over a two year period overburden investigations would be conducted on all farms and in the interim period a lower hydraulic loading of slurry would be applied. The applicant proposes an interim maximum slurry application of 13.48 m³/ha equivalent to 1.34 mm of slurry on the ground surface per annum. The application rate proposed is below the maximum permitted phosphorous application for grazing at soil levels at Index 3. This requires 742 hectares and there is 1147 hectares available for landspreading. Conditions 5.5.9, and 5.5.11 of the PD require a vulnerability assessment to be conducted, and limit the maximum application rate of slurry in the interim. Condition 5.5.10 of the PD requires the submission of a Nutrient Management Plan.

The applicant will be required to conduct annual groundwater monitoring for nine wells within the spreadland area. One of the wells is on the site of the pig unit. A cordon sanitaire of 50 meters for domestic wells is included in the PD. The quality of groundwater in the spreadlands was assessed in the EIS by obtaining samples from twelve wells. The samples were in 100% compliance with drinking water standards for Nitrate, ammonia, phosphate, pH and conductivity.

There are three emission points to the surface water stream on site from the roof and clean yard areas of the site. The stream rises on site and ultimately discharges to the Owenmore river. There is an EPA monitoring station approximately 3KM downstream of the confluence of the on-site stream and the Owenmore river. Historic samples of streamwater quality showed elevated ammonia nitrogen and phosphorous. This was thought to be due to contamination sources due to site configuration at the time. The site has since been upgraded. More recent samples showed reduced ammonia nitrogen and phosphorous values. The improved drainage system proposed for the site will ensure that surface water is not contaminated and that there is a separate drainage system for contaminated surface water. Monitoring requirements for surface water discharges consist of a weekly visual inspection, and analysis of COD or BOD, ammonia and phosphorus on a quarterly basis.

Monitoring of the surface and ground waters within the landspread areas as identified in the application, will be required as set out in schedules 4(ii), and 4(iii) of the PD.

Noise:

In relation to noise, there are three houses located within 50 meters of the piggery (the property owned by the proprietor, a worker at the unit and a residence recently rented) another residential property is situated 400 m from the unit. According to the applicant there will be no discernible increase in noise levels at the site with the proposed expansion. A noise survey conducted during daytime at the present facility gives average boundary levels ranging from 45 dB(A) to 56 dB(A). The highest value being recorded adjacent to the main road. No noise complaints have been received by the Agency in relation to this facility. Standard daytime and night time noise limits have been set for this facility, for noise sensitive locations, in the PD.

Submissions:

There were three submissions received by the Agency in relation to this application. *A resident of Ballinacarrow raised the issue that widespread dumping of slurry was taking place in a disused gravel pit by the piggery at a location close to her residence. There is evidence of levelling, and the resident wanted to be aware of whether these lands would be used for landspreading.*

Comment

The resident was advised that full details of lands proposed for landspreading was available for inspection at the offices of Sligo County Council. The Local Authority investigated this incident and issued a Section Notice to the land owner. From a conversation with the local Authority in April 1999, the Local Authority stated that a recent follow-up site visit confirmed that there was now no evidence of dumping taking place. This area relates to land sector 29.

In relation to the second submission, Sligo County Council note that the applicant proposes to spread pig slurry in the immediate vicinity of Bellanascarrow Lake. This is considered an unacceptable risk to water quality in the lake, as its the source of water supply to Ballymote. The Local Authority request that a condition be inserted in the licence prohibiting the spreading of pig slurry in the immediate catchment of the lake.

Comment

The company identified this water supply in the application and proposed a buffer zone of 300 meters around the lake and 100 meters around the feeder stream feeding the lake. These buffer zones have been included in the proposed determination.

Submission from Waste Action Group, Borrisoleigh Co. Tipperary.

Item 1: The action group objects to the licence being granted stating that current BATNEEC is out of date and is not the Best Available Technology not exceeding excessive cost.

Comment:

The current BATNEEC guidance note are the most up to date guidelines for the pig production sector and represents BATNEEC.

Item 2: The current Teagasc recommendations to the maximum required phosphorus for the growing of silage is 6 units Morgan's P.

Comment:

In licensing the pig production sector the Agency requires annual approval of Nutrient Management Plans and application rates can be amended in light of the results of soil P testing in order to ensure that a satisfactory balance of input and output is achieved. Monitoring of soil fertility status is requested every two years for soils <10mg P l. This testing rate exceeds that requested by Teagasc for agronomic recommendations.

Recommendations:

It is recommended that the Board approve the proposed determination as outlined.

Signed

Annette Prendergast